# TRAINING TECHNOLOGY REPORT
# DESCRIBES INNOVATIVE APPROACHES

When cars were mass produced earlier this century an infrastructure built up around them. Highways, gas stations, restaurants, parking lots, and even parking meters changed the way our society worked, travelled, and played. The same kind of change is occurring now with computers. A powerful infrastructure encompasses affordable personal computers, powerful software products, high capacity CD-ROMs and easy links into the Internet and World Wide Web. With these changes, we can work at home via telecommuting, or not travel to attend the training courses that come to us instead.

The National Highway Traffic Safety Administration (NHTSA) sponsored an assessment of the various technologies available to deliver training courses. Presently, NHTSA develops, distributes, and maintains 12 National Standard Curriculum courses for Emergency Medical Services (EMS), among others. These Curricula provide uniformity in prehospital emergency medical services training across the country. States rely on these course to qualify and train their EMS providers.

The *Training Technology Report* is 34 pages filled with descriptions of innovative technologies and examples of how Federal agencies and state governments are using different approaches to deliver cost effective emergency medical services training programs.

## Distance Learning
With digital communications, instructors can conduct interactive classes with multiple remote classrooms. When networked personal computers were introduced, instructors were able to link audio, written, and live computer-based data into the classroom. With two-way video, students and instructors can see each other as well.

## CD-ROM Technology
In the past three years, there has been an avalanche of Compact Disk-Read Only Memory (CD-ROM) software. CD-ROMs can accommodate large quantities of multimedia data. A single 4.72 " disk can hold up to 640 megabytes of data. For example, a single disk can hold all of the NHTSA EMS courses in their current formats. New disks, called MMCD or SD disks, will be able to hold up to 15 times more data. CD-ROM is a low cost, high capacity medium for courses that do not require frequent updating. To make it work, a remote site needs only to have computers equipped with CD-ROM drives.

## Computer-Based Training (CBT)
CBT training is delivered primarily on-line through computers. Typically a CBT program allows students to choose their path and set their own pace through the subject matter, and success on achievement tests branches the student to more difficult sessions.

## Broadcast Systems
Satellite network broadcast is another source. For example, the Texas Tech University Health Science Center produces HealthNet to reach over 100 downlink sites. Courses are broadcasted three days a week, nine hours a day to rural students who can earn continuing education certificates. Students can call in and talk with instructors who are from the university or Allied Health.

## Bulletin Board Systems
Bulletin Board Systems have been around since 1978 and it is estimated that there are more than 45,000 public and 120,000 private bulletin boards operating in the U.S. today. Some let members discuss, make decisions, and exchange messages.

Others work as a clearinghouse to update training information.

**Electronic Meetings**
On-line services that require a monthly subscription fee facilitate electronic discussions or act as an auditorium.

**Internet and World Wide Web**
Commercial organizations, educational institutions, and government agencies are just some of the content providers. One EMS site worth visiting is maintained by Captain Dean Tabor, EMT-III and Safety Officer at the Chena Goldstream Fire & Rescue in Fairbanks, Alaska. It lists over 80 EMS related sites. NHTSA's homepage offers facts, reports, and traffic safety information at *http://www.nhtsa.dot.gov/*.

**Examples**
The report includes interesting examples of how each of these technology types is being used in eight states and various Federal agencies. For example, *Telemedicine*, developed by the U.S. Army, connects remotely located physicians with any area in the world via satellite, TV cameras, and monitors. In Somalia and the Balkans, doctors in the United States communicated one-on-one with patients and their local caregivers to review X-rays, transmit pictures, and provide solutions.

In *MEDIC-CAM*, the Army uses a video display unit mounted on a medical technician's head. The technician in the field focuses the unit on the injury, and a paramedic or physician's assistant located at a separate command site relays audio and video information to help treat the injury.

**Resources**
The report concludes with helpful resources, both on-line and at the library, for additional information and specific training courses or curricula. Appendices contain a glossary of terms, instructional technology approaches, and contacts for each of the examples described in the report.

For a copy of *Training Technology Report*, write to Emergency Medical Services Division, NHTSA, NTS-14, 400 Seventh Street, S.W., Washington, DC 20590 or send a fax to (202) 366-7721. Cmdr Garry Criddle was the project manager, e-mail *gcriddle@nhtsa.dot.gov*

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